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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS : DR. PETER GLEICHENHAGEN and ANNEMARIE MÜLLER
SERIAL NO. : TO BE ASSIGNED
FILED : HERewith
FOR : PREPARATION OF ACRYLIC HOT-MELT PRESSURE-
SENSITIVE ADHESIVES FROM AQUEOUS DISPERSE SYSTEMS
ART UNIT : TO BE ASSIGNED
EXAMINER : TO BE ASSIGNED

March 22, 2001

Hon. Commissioner of Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

SIR:

Prior to examination, please amend the above-identified application as follows:

IN THE CLAIMS:

3. (Once Amended) The process as claimed in claim 1, wherein water-soluble substances which are stable at the melting temperature, preferably short-chain polymers which carry amide groups, and nonionic and also anionic low-foam emulsifiers, in an overall concentration of up to 4% by weight, are used as stabilizers for preparing the dispersion.

4. (Once Amended) The process as claimed in claim 1, wherein the chain lengths of the polymer are restricted by the presence of chain-length-regulating substances during the polymerization, preferably by comonomers from the group of the vinyl ethers, preferably cyclohexenyl ethers, fumaric esters or maleic esters, and also by styrene or by hydrophilic rosins in amounts of up to 10% by weight based on polymer.

5. (Once Amended) The process as claimed in claim 1, wherein the polymerization is conducted with linearly polymerizing, water-insoluble initiators which are soluble in the monomer mixture, preferably azo initiators, in amounts of up to 1% by weight based on the overall monomer mixture.

6. (Once Amended) The process as claimed in claim 1, wherein meltable polymers which are soluble without gel in organic solvents are formed which have a relative viscosity at 25°C in toluene of 1680 - 5000 and a melting range between 80°C and 170°C.

7. (Once Amended) The process as claimed in claim 1, wherein the polymer dispersion is dewatered under subatmospheric pressure in kneading devices or extruders having devolatilizing means in temperature ranges between 90°C and 160°C and, by way of the conveying pressure of toothed wheel pumps and/or extruder screws, are filmed, in the form of a homogeneous, molecularly disperse melt, via a slot die.

8. (Once Amended) The process as claimed in claim 1, wherein prior to the dewatering natural rubber latices or synthetic rubber latices in amounts of up to 70% by weight based on acrylic polymer are mixed as elastic fillers into the hot-melt pressure-sensitive adhesive dispersion, and/or before or after the dewatering up to 40% by weight of inorganic fillers and/or up to 30% by weight of polyacrylate-compatible plasticizers are admixed.

9. (Once Amended) The process as claimed in claim 1, wherein, after the dewatering, up to 50% by weight, based on overall polymer, or 35% by weight, based on acrylic polymer, of tackifier resins, preferably based on hydrocarbons with aromatic fractions, are mixed in.

10. (Once Amended) The process as claimed in claim 1, wherein, after the dewatering, up to 2% by weight of UV photoinitiators are admixed to the melt and/or incorporated into the acrylic polymer by copolymerization and/or up to 5% by weight of polyunsaturated (meth)acrylic monomers are incorporated into the melt and the film formed from the melt is crosslinked by means of 2 J/cm^2 - 10 J/cm^2 UV radiation and/or 10 kGy - 100 kGy electron beams, so as to give an insoluble fraction of up to 95% by weight acrylic polymer.

11. (Once Amended) Method of using the hot-melt pressure sensitive adhesives as set forth in claim 1 for the solvent-free preparation of punched elements or tapes which are pressure-sensitively adhesive on one or both sides.

REMARKS

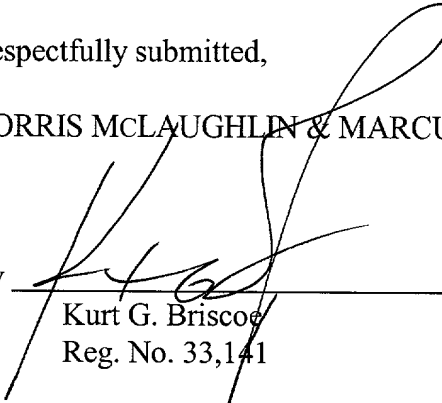
The amendments above eliminate multiple dependencies, and place the claims in better form for U.S. examination.

Early and favorable action is earnestly solicited.

Respectfully submitted,

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MARK-UP SHOWING THE CHANGES MADE IN THE PREVIOUS CLAIM 1.
THE CLAIM AS AMENDED ABOVE

3. The process as claimed in [one of claims 1 - 2] claim 1, wherein water-soluble substances which are stable at the melting temperature, preferably short-chain polymers which carry amide groups, and nonionic and also anionic low-foam emulsifiers, in an overall concentration of up to 4% by weight, are used as stabilizers for preparing the dispersion
4. The process as claimed in [one of claims 1 - 3] claim 1, wherein the chain lengths of the polymer are restricted by the presence of chain-length-regulating substances during the polymerization, preferably by comonomers from the group of the vinyl ethers, preferably cyclohexenyl ethers, fumaric esters or maleic esters, and also by styrene or by hydrocarbons in amounts of up to 10% by weight based on polymer.
5. The process as claimed in [one of claims 1 - 4] claim 1, wherein the polymerization is conducted with linearly polymerizing, water-insoluble initiators which form a monomer mixture, preferably azo initiators, in amounts of up to 1%, based on the overall monomer mixture.
6. The process as claimed in [one of claims 1 - 5] claim 1, wherein the monomers which are soluble without gel in organic solvents are free of free radicals, have a viscosity at 25°C in toluene of 1680 - 5000 and a refractive index at 20°C of 1.47 - 1.50.
7. The process as claimed in [one of claims 1 - 6] claim 1, wherein the polymer is dewatered under subatmospheric pressure, wherein dewatering means in temperature range of 100°C - 180°C, and the polymer is conveyed by means of a conveying pressure of toothed rollers, wherein the polymer is in the form of a homogeneous, molten mass.

8. The process as claimed in [one of claims 1 - 7] **claim 1**, wherein prior to the dewatering natural rubber latices or synthetic rubber latices in amounts of up to 70% by weight based on acrylic polymer are mixed as elastic fillers into the hot-melt pressure-sensitive adhesive dispersion, and/or before or after the dewatering up to 40% by weight of inorganic fillers and/or up to 30% by weight of polyacrylate-compatible plasticizers are admixed.
9. The process as claimed in [one of claims 1 - 8] **claim 1**, wherein, after the dewatering, up to 50% by weight, based on overall polymer, or 35% by weight, based on acrylic polymer, of tackifier resins, preferably based on hydrocarbons with aromatic fractions, are mixed in.
10. The process as claimed in [one of claims 1 - 10] **claim 1**, wherein, after the dewatering, up to 2% by weight of UV photoinitiators are admixed to the melt and/or incorporated into the acrylic polymer by copolymerization and/or up to 5% by weight of polyunsaturated (meth)acrylic monomers are incorporated into the melt and the film formed from the melt is crosslinked by means of 2 J/cm² - 10 J/cm² UV radiation and/or 10 kGy - 100 kGy electron beams, so as to give an insoluble fraction of up to 95% by weight acrylic polymer.
11. [The use of] **Method of using** the hot-melt pressure sensitive adhesives as set forth in [one of claims 1 - 10] **claim 1** for the solvent-free preparation of punched elements or tapes which are pressure-sensitively adhesive on one or both sides.

**MARK-UP SHOWING THE CHANGES MADE IN THE PREVIOUS CLAIM TO YIELD
THE CLAIM AS AMENDED ABOVE**

3. The process as claimed in [one of claims 1 - 2] claim 1, wherein water-soluble substances which are stable at the melting temperature, preferably short-chain polymers which carry amide groups, and nonionic and also anionic low-foam emulsifiers, in an overall concentration of up to 4% by weight, are used as stabilizers for preparing the dispersion.
4. The process as claimed in [one of claims 1 - 3] claim 1, wherein the chain lengths of the polymer are restricted by the presence of chain-length-regulating substances during the polymerization, preferably by comonomers from the group of the vinyl ethers, preferably cyclohexenyl ethers, fumaric esters or maleic esters, and also by styrene or by hydrophilic rosins in amounts of up to 10% by weight based on polymer.
5. The process as claimed in [one of claims 1 - 4] claim 1, wherein the polymerization is conducted with linearly polymerizing, water-insoluble initiators which are soluble in the monomer mixture, preferably azo initiators, in amounts of up to 1% by weight based on the overall monomer mixture.
6. The process as claimed in [one of claims 1 - 5] claim 1, wherein meltable polymers which are soluble without gel in organic solvents are formed which have a relative viscosity at 25°C in toluene of 1680 - 5000 and a melting range between 80°C and 170°C.
7. The process as claimed in [one of claims 1 - 6] claim 1, wherein the polymer dispersion is dewatered under subatmospheric pressure in kneading devices or extruders having devolatilizing means in temperature ranges between 90°C and 160°C and, by way of the conveying pressure of toothed wheel pumps and/or extruder screws, are filmed, in the form of a homogeneous, molecularly disperse melt, via a slot die.

APPENDIX

TITLE: PREPARATION OF ACRYLIC HOT-MELT PRESSURE-SENSITIVE ADHESIVES FROM AQUEOUS DISPERSE SYSTEMS

LIST OF INVENTORS:

1. Dr. Peter Gleichenhagen
2. Annemarie Müller

CLAIM TO PRIORITY:

Priority is hereby claimed under 35 USC 119 on the basis of German Application Serial No. 100 15 981.8, filed on March 3, 2000.

I hereby certify that the items listed on the attached Utility Patent Application Transmittal are being deposited with the United States Postal Service "Express Mail Post Office Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Hon. Commissioner for Patents, Washington, D.C. 20231, Box Patent Application.

NORRIS, McLAUGHLIN & MARCUS

By: 